

PATENT SPECIFICATION

916,197



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International Classification:—A61c.

COMPLETE SPECIFICATION

DRAWINGS ATTACHED

Drill for Dental Purposes or the Like

I, PETER BRASSELER, a citizen of the Federal Republic of Germany, of Molindergrasweg, Lemgo/Lippe, Federal Republic of Germany, trading as Gebr. BrasseLER, of No. 38, Vogelsang, Lemgo/Lippe, Federal Republic of Germany, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to drills, and more specifically to a drill for dental purposes.

Dental drills have already become known in many forms of construction, for example as so-called hard metal drills or as diamond drills with a layer of diamond chips on the surface of the drill.

It is the object of the present invention to improve the hitherto known hard metal and diamond drills.

This object is substantially achieved by the present invention by providing a drill for dental purposes which comprises in combination a diamond drill and a metal drill.

This combination combines in itself the advantages of the metal drills and the diamond drills without having the disadvantages thereof.

Several preferred embodiments of the invention will now be described by way of example and with reference to the accompanying drawings, in which:—

Fig. 1 is a side view of a blank with a hard metal layer on one end face, from which a dental drill according to the invention can be made;

Fig. 2 is a similar view of the blank reduced in diameter;

Fig. 3 is a similar view of the blank with the hard metal layer having been machined to form a cutting element;

Fig. 4 is a longitudinal section through the dental drill shown in Fig. 5;

[Price 4s. 6d.]

Fig. 5 is a side view of a dental drill having a cylindrical head portion which has been fitted with diamond chips;

Figs. 6 to 11 are side views of modified forms of construction of dental drills;

Fig. 12 is a transverse section through the dental drill shown in Fig. 11, taken on line XII-XII of Fig. 11.

Figs. 1 to 5 illustrate the individual steps of making a dental drill according to the invention.

Fig. 1 shows an unmachined blank composed of a shank 10 and a metal or hard metal layer 11 soldered to one end face thereof.

The blank shown in Fig. 2 has its shank machined by grinding or turning so as to be divided into a neck portion 9 and a head portion 10a. The layer 11 has been subjected to metal cutting so that a layer of reduced diameter is produced.

In Fig. 3 the layer has been rounded off and provided with teeth in the manner desired, thus forming a cutting element 11d.

Figs. 4 and 5 show a finished dental drill with a cylindrical head portion 10a which has been fitted with a layer 12 of diamond chips embedded in metal or synthetic plastic material. The diameter of the head portion 10a provided with the diamond layer 12 substantially corresponds over the entire length of the head portion to the diameter of the cutting element 11b.

Figs. 6 to 8 show modified forms of construction of the dental drill in which relatively small cutting elements 11b and 11c are used and a head portion with its layer 12 conically tapers towards the neck portion 9, as shown in Fig. 6, or a head portion 10d increases in diameter towards the neck portion 9, as shown in Fig. 7, or a head portion 10e has inwardly curved walls, as shown in Fig. 8, each of the different head portions being

Price 33p

relatively long and fitted with diamond chips.

Fig. 9 shows another form of construction of the dental drill with a substantially conical cutting element 11d and a relatively short head portion 10f fitted with diamond chips.

In a further form of construction shown in Fig. 10, a relatively large substantially round cutting element 11c and the relatively short head portion 10f are provided.

In still another form of construction shown in Figs. 11 and 12, the dental drill has a head portion 10g fitted with diamond chips and provided with grooves 16, preferably in the form of a helical thread. This involves the essential advantage that the spray medium serving for cooling or cleansing is more rapidly fed to cutting element 11f.

The invention may be embodied in other specific forms without departing from the essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

An essential advantage of the combined metal and diamond dental drill according to the invention consists in that a surprisingly favourable, uniform distribution of heat over the cutting element and the head portion is obtained during the drilling operation, so that accumulations of heat which hitherto could not be avoided are eliminated. Moreover, time is saved during the drilling opera-

tion since a metal drill is not required to be replaced by a diamond drill when so desired, as was hitherto usual. The combined dental drill according to the invention, on the one hand, works with its metal, preferably hard metal cutting element into the depth. On the other hand, it has lateral flanks which do not cut, but grind a tooth or polish it.

WHAT I CLAIM IS:—

1. A drill for dental purposes comprising in combination a diamond drill and a metal drill.

2. A drill as claimed in claim 1, wherein the metal drill is a hard metal drill.

3. A drill as claimed in claim 1, comprising a head portion formed by the diamond drill and fitted peripherally with diamond chips; a toothed cutting element formed by the metal drill on one end of the head portion, and a neck portion projecting from the opposite end of the head portion.

4. A drill as claimed in claim 3, wherein the toothed cutting element is relatively small and the head portion is relatively long.

5. A drill as claimed in claim 3, wherein the cutting element is relatively large and the head portion is relatively short.

6. A drill as claimed in claim 3, wherein the head portion is provided with grooves.

7. A drill as claimed in claim 6, wherein the grooves are in the form of a helical thread.

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FIG.1

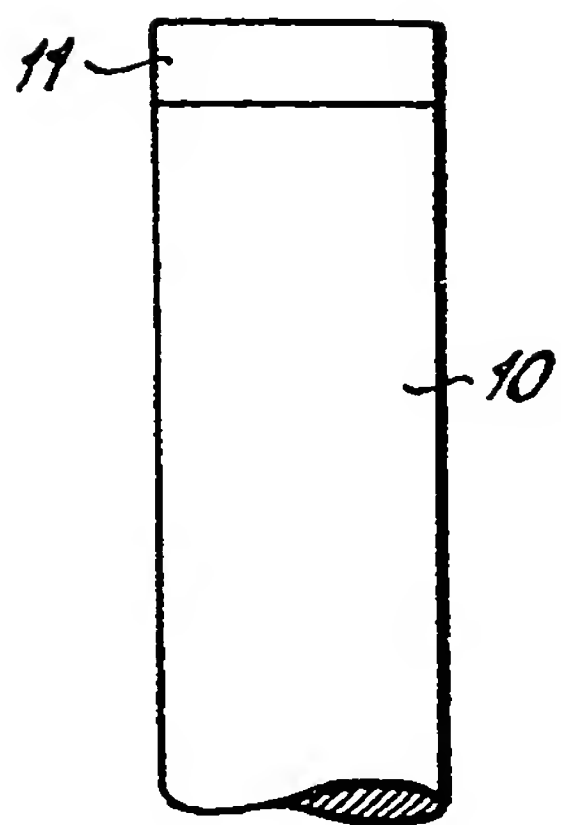


FIG.2

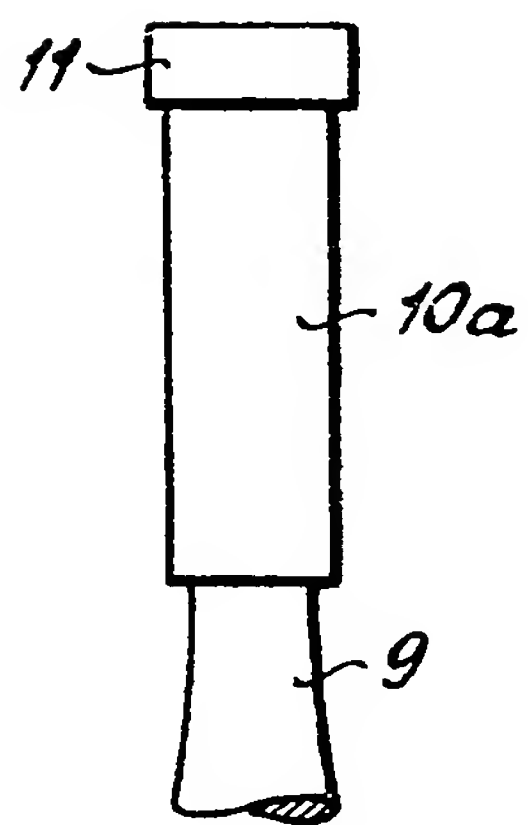


FIG.3

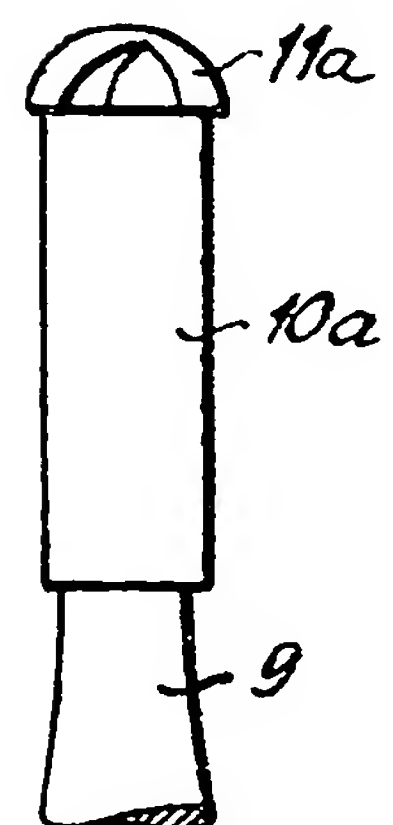


FIG.4

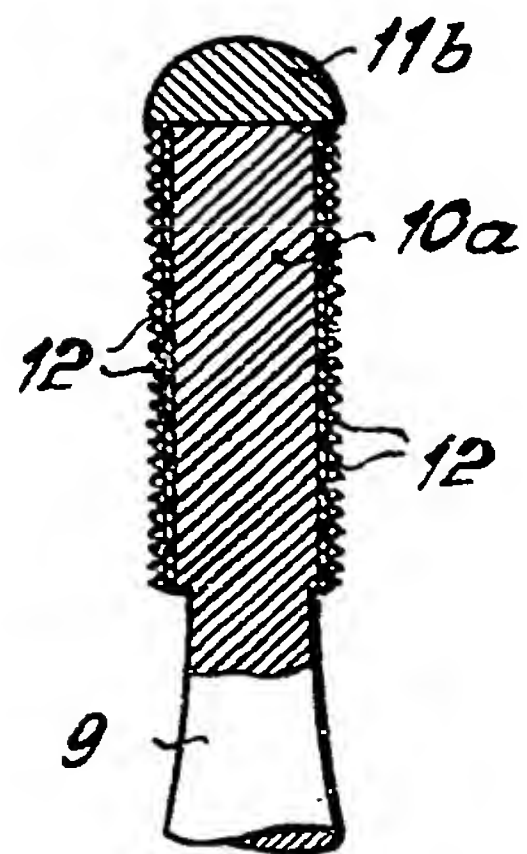


FIG.5

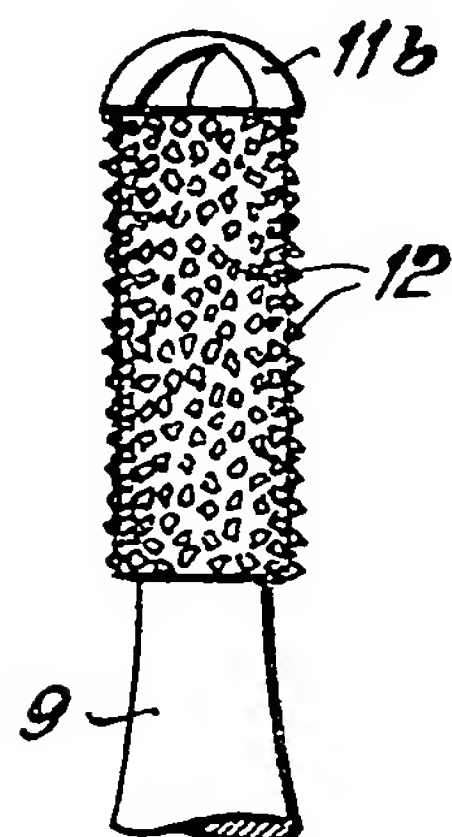
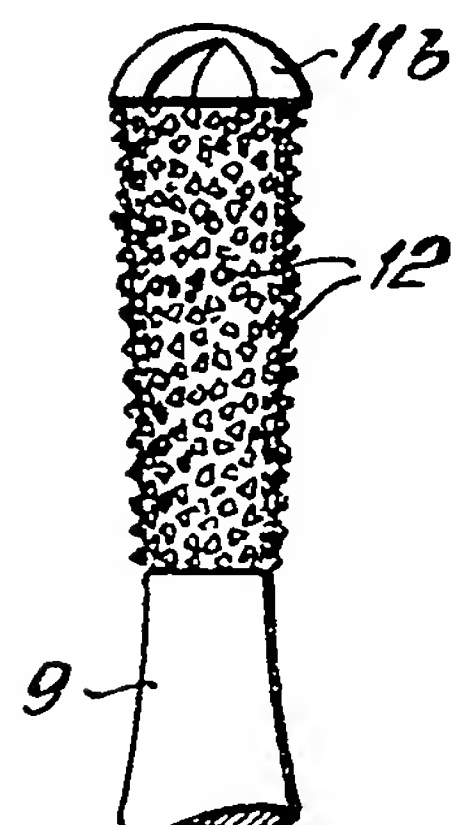


FIG.6



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2 SHEETS

COMPLETE SPECIFICATION
This drawing is a reproduction of
the Original on a reduced scale.
SHEETS 1 & 2

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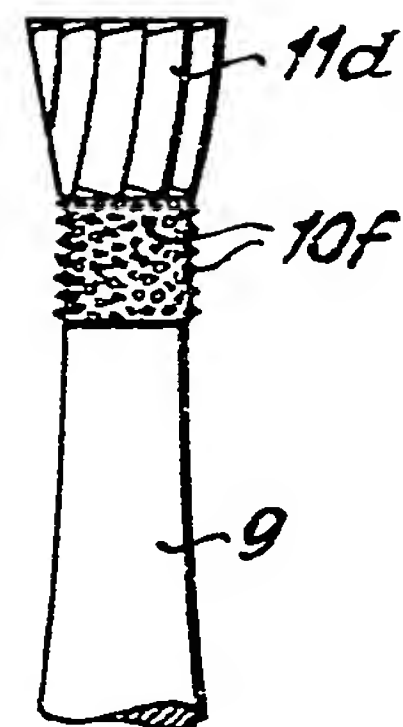
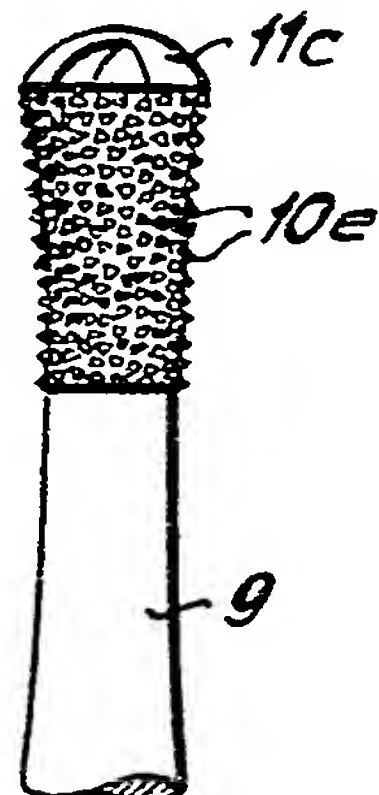
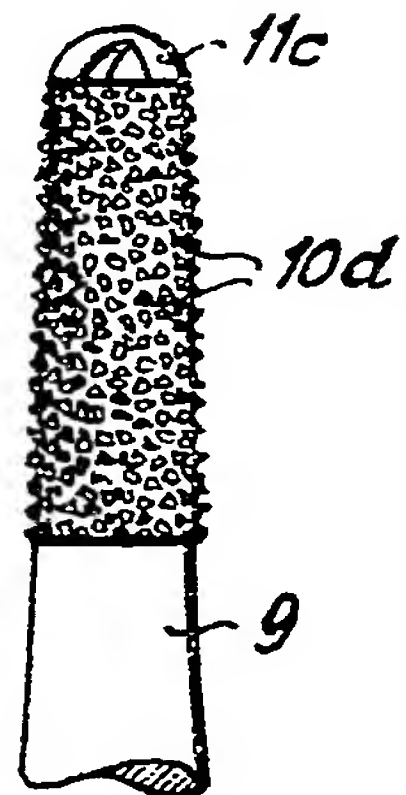
FIG. 7

FIG. 8

FIG. 9

1a

2a



5

FIG. 10

FIG. 11

1b

12

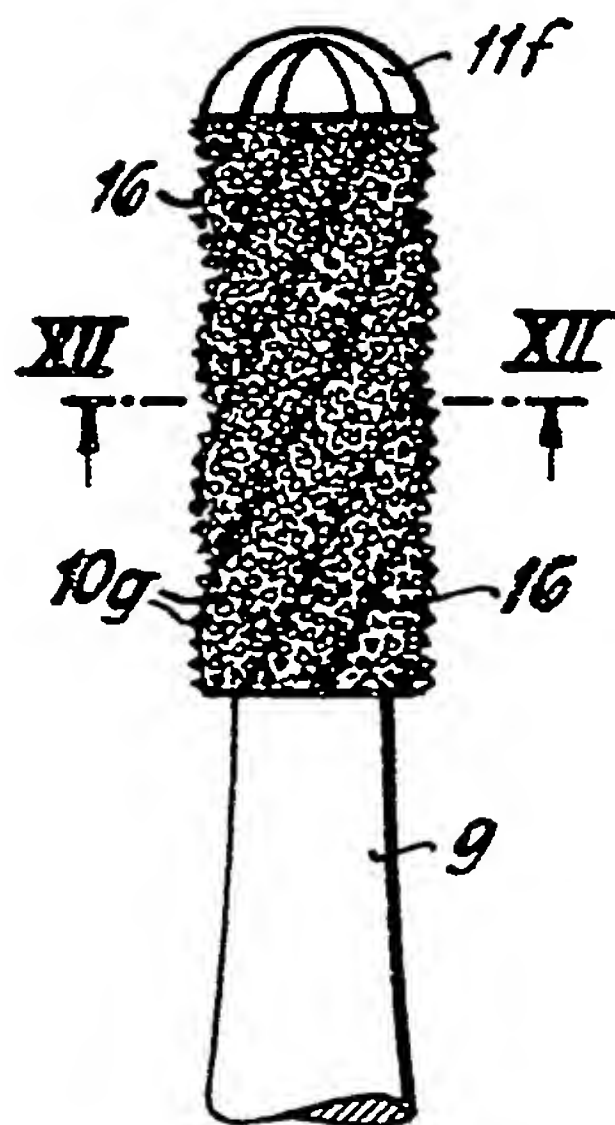
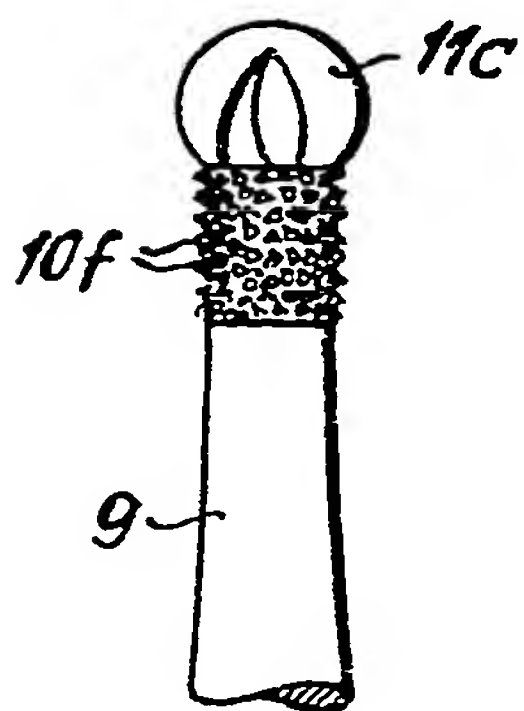


FIG. 12

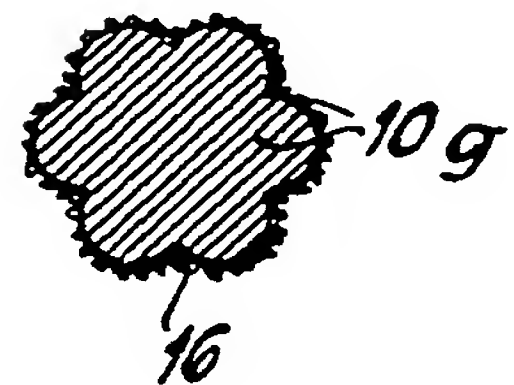


FIG.1

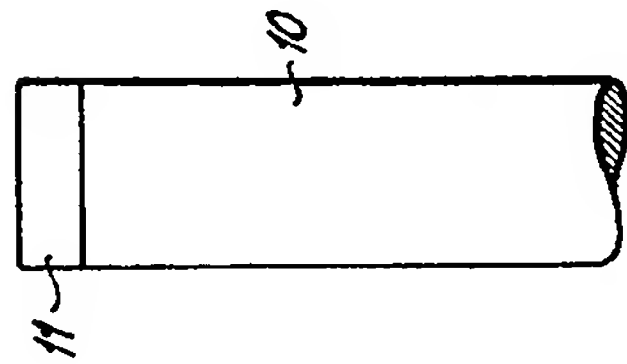


FIG.2

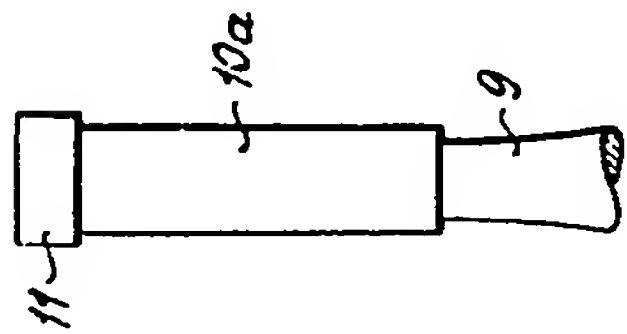


FIG.3

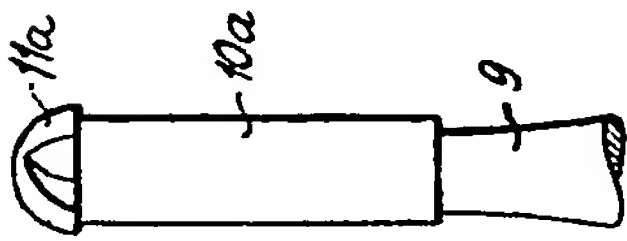


FIG.7

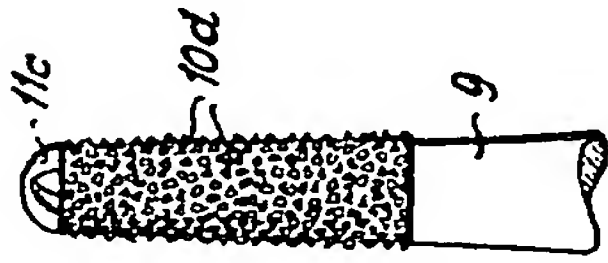


FIG.8

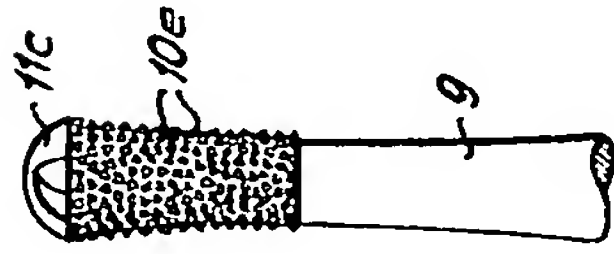


FIG.9

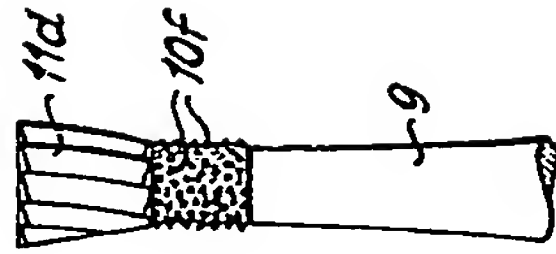


FIG.4

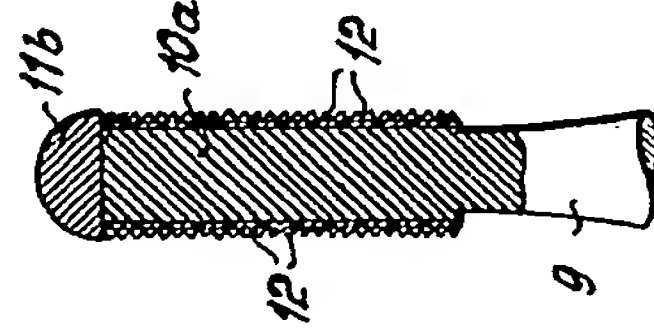


FIG.5

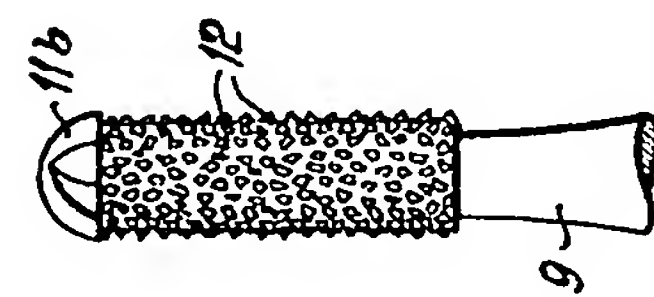


FIG.6

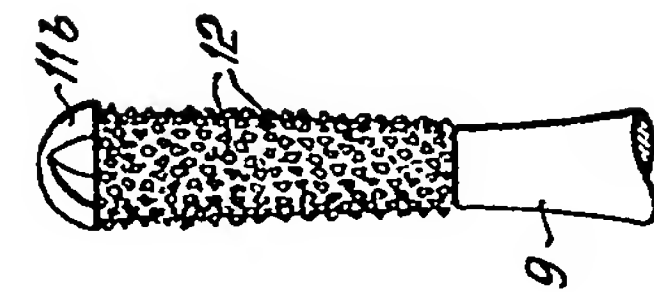


FIG.10

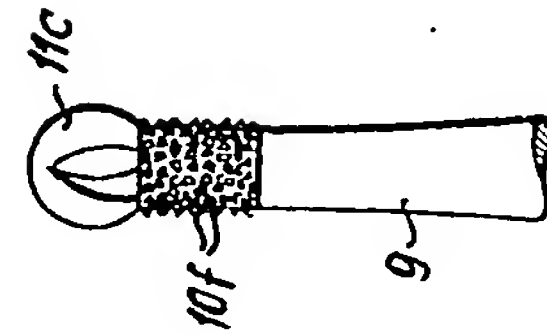


FIG.11

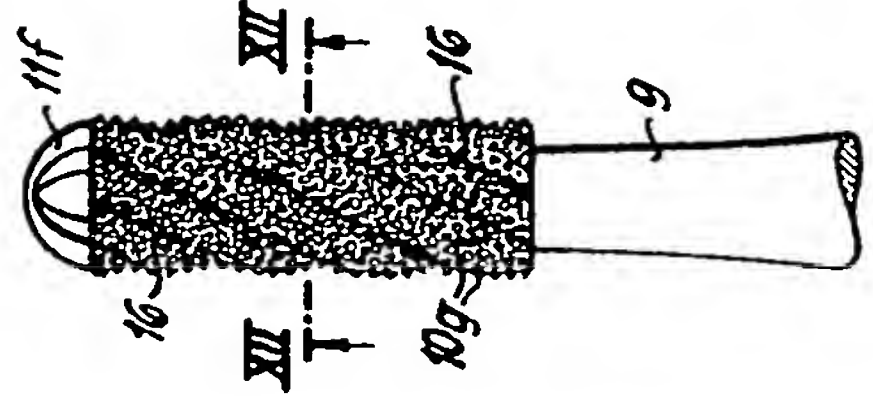
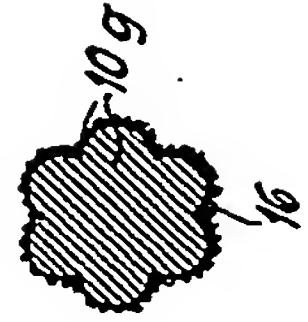


FIG.12



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